

February 23, 2011



U.S. Department  
of Transportation

East Building, PHH – 30  
1200 New Jersey Avenue, Southeast  
Washington, D.C. 20590

**Pipeline and Hazardous  
Materials Safety Administration**

DOT-SP 15141

EXPIRATION DATE: December 31, 2012

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Material Innovations, Inc.  
Knoxville, TN
2. PURPOSE AND LIMITATIONS:
  - a. This special permit authorizes the manufacture, marking, sale and use of non-refillable, non-DOT specification cylinder containing Boron Trifluoride, for transportation in commerce. The cylinders are described as electron tubes that are part of radiation detectors. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
  - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.101 Column (9) in that boron trifluoride is forbidden by air, except as specified herein; the labeling and placarding requirements of Part 172 except for air; and 173.302a (a)(1) in that the prescribed packagings are not authorized; and in the ICAO Technical Instructions Table 3-1, Columns 9, 10, 11, and 12.

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5. BASIS: This special permit is based on the application of Material Innovations, Inc. dated September 22, 2010, submitted in accordance with § 107.105 and the public proceeding thereon.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Boron trifluoride, compressed	2.3	UN1008	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings prescribed are non-refillable, non-DOT specification cylinders described as electron tubes. The electron tubes are constructed of stainless steel or aluminum. The tubes have welded joints and metal feed-through assemblies. The maximum tube volume is 238 cubic inches with a maximum operating pressure of 25 psig. The design burst pressure of each electron tube must be at least 4 times the operating pressure, but not less than 100 psig. Each electron tube must be manufactured in accordance with the drawings and specifications on file with Approvals and Permits Division.

b. OPERATIONAL CONTROLS -

- (1) Prior to filling, the exterior of each electron tube must be visually inspected. If the tube appears to be cracked, leaking, bulging, defective, physically abused, damaged by fire/heat, detrimentally rusted and/or corroded, it must not be used.
- (2) Electron tubes must be shipped in strong outside packagings that are capable of withstanding a drop of 6 feet; on a non-yielding surface without breakage or rupture of the outside packaging.
- (3) If repackaged, packagings, used to ship larger equipment containing electron tubes covered by this special permit must be strong outside packagings providing equivalent protection for the

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devices as specified in paragraph 7.b.(1) of this special permit.

- (4) Packagings authorized by this special permit may be shipped by cargo aircraft. These packagings used for air transportation must not contain more than 57 grams of boron trifluoride per packaging.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

b. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package and it is offered for transportation in conformance with this special permit and the HMR.

c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

e. A current copy of this special permit must be maintained at each facility where the packaging is manufactured under this special permit. It must be made available to a DOT representative upon request.

f. Except when transported by air, packages prescribed by this special permit are excepted from 49 CFR Part 172, Subparts E (labeling) and F (placarding).

9. MODES OF TRANSPORTATION AUTHORIZED: Motor Vehicle, Cargo aircraft, Cargo Vessel, Rail Freight.

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10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
  - o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
  - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
  - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

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12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety -- OHMSPA, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie  
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at [http://hazmat.dot.gov/sp\\_app/special\\_permits/spec\\_perm\\_index.htm](http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm) Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: LAVALLE